

RAF
SHAWBURY



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Introduction

Royal Air Force Shawbury is situated in North Shropshire, 55 miles north-west of Birmingham. The nearest large towns are Shrewsbury, 6 miles to the south-south-west, and Telford, 12 miles to the south-east.

The working population of the station is about 1100 of which over half are civilians.

RAF Shawbury's 2 main activities are training helicopter aircrew and air traffic controllers. The station also has a number of ancillary tasks, the most important of which is to store aircraft.

Formed on 1 April 1997, the Defence Helicopter Flying School, equipped with the Eurocopter Squirrel HT1 and Bell Griffin HT1, provides ab-initio basic and advanced single-engine helicopter training for pilots of the 3 Services, and advanced twin-engine helicopter training for RAF pilots, crewmen and navigators up to the award of their brevets.

The Central Flying School (Helicopter) Squadron trains qualified helicopter pilot instructors for the 3 Services (and for some overseas countries) and helicopter navigator and crewman instructors for the RAF.

The main non-flying unit is the Central Air Traffic Control School, which trains air traffic controllers and assistants for the RAF and RN (and for some overseas countries); it also trains selected qualified controllers in advanced area radar control techniques and trains selected controllers to become instructors. Additionally, the Flight Operations training element qualifies personnel for duties in RAF station operations centres.

Also located at RAF Shawbury are: the Air Traffic Control Examining Board, which checks the controlling standards at Service bases world-wide; the Pre-employment Training School, which provides Service personnel in ground trades with a week's instruction on general helicopter matters; and No 6 Flight Army Air Corps (Volunteers) which, equipped with the Aerospatiale Gazelle, provides communications support for Army units in the UK.

The Aircraft Maintenance and Storage Unit's task is to prepare and store fixed-wing aircraft and helicopters at varying states of readiness as part of the fatigue-life management strategy for the RAF's front-line and training fleet.

Underpinning all these activities with vital engineering and supply support is the resident Contractor, FB Heliservices Ltd (formerly FR Aviation Services and FRA Serco), which has supported RAF Shawbury's roles since 1991. Although the multi-activity contract, which includes the purchase and maintenance of the DHFS fleet of helicopters, is ultimately controlled by FBS Ltd, day-to-day management is exercised at station level by FB Heliservices Ltd.

The station crest, which incorporates the 3 lions' faces taken from the Arms of the Borough of Shrewsbury, was formally approved by Her Majesty the Queen in March 1987.

The adopted motto, freely translated as "I teach, I guide, I fly", aptly summarises the activities of many of the personnel on the station.

HISTORY of RAF Shawbury

The Early Years

The station's association with flying training goes back to June 1917, when No 29 (Flying Training) Wing and the Aeroplane Repair Section of the Royal Flying Corps were established, under the command for a short period of Major A W Tedder, on the site of today's airfield.

Following the site's reversion to agricultural use in 1920, the darkening war clouds gathering over Germany in the late 1930s saw Shawbury once again being activated as an airfield, although the arrival of No 27 Maintenance Unit (MU) on 1 February 1938 preceded that of No 11 Flying Training School (FTS) from RAF Wittering by 3 months. Aircraft types seen at RAF Shawbury during these early days included the Hart, Blenheim, Audax, Battle, Gladiator, and Fury. By mid-1940 the FTS was consolidating the training given by civilian instructors to prepare pilots for operational squadrons. In 1942, now renamed as No 11(Pilot) Advanced Flying Unit, the unit received its pilots for training from overseas bases – mainly in the USA.

Navigator Training Commences

In January 1944 Shawbury saw a major change of role with the departure of the 130 Airspeed Oxfords of 11(P) AFU to Calveley, Cheshire, to make room for the Central Navigation School (CNS), which moved in February from Cranage with its Wellingtons and Stirlings. In 1944 the famous Aries series of flights were mounted from Shawbury which took a specially modified Lancaster aircraft on flights around the globe and over the North Pole. These epic flights were conducted to evaluate equipment and techniques developed at the school, to carry out research and to disseminate information to air forces overseas. It was at this time that the CNS was, for a short period, renamed the Empire Air Navigation School.



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Air Traffic Control Training

The arrival, in 1950, of the School of Air Traffic Control (ATC) from RAF Watchfield saw the renaming of the CNS to the Central Navigation and Control School. Wellingtons and Lancasters were replaced by Lincolns, which were used together with Ansons and, later, Vampires and Provosts for navigation and ATC training. The school was transferred on 21 June 1951 by being presented with the Shrewsbury Borough Flight School, a presentation which was marked by a parade of some 700 officers and airmen. In 1963 the Navigation Wing moved to RAF Manby, leaving Shawbury the task of all aspects of ATC training as the Central Air Traffic Control School.

First Contractors

September 1961 marked the start of a new chapter in the station's history with the arrival of Marshall's (Outstations) Division, which won the contract to fly and maintain the Varsity, Provost and Vampire aircraft, to man associated engineering and support sections, and to service and maintain the CATCS simulators. The residual aircraft storage task was also taken on by Marshall's from 27 MU on its disbandment in 1972.

Helicopters Arrive from Tern Hill

The arrival of 2 FTS's Whirlwinds and the Central Flying School (Helicopter) Squadron's (CFS(H)) Gazelles from Tern Hill in 1976 signified a new training role for RAF Shawbury. By 1980 basic helicopter training was provided by 1 Sqn on the Gazelle and advanced training for pilots and crewmen by 2 Sqn on the Wessex, with search and rescue training being given by the detached flight at RAF Valley. 2 FTS was formally disbanded on 1 April 1997 when the new tri-Service Defence Helicopter Flying School was formed, equipped with the single-engine Eurocopter Squirrel and twin-engine Bell Griffin, supported by the resident Contractor, FRA SERCo, which had provided engineering and supply support for the station since 1991.



Defence HELICOPTER F



The task of the Defence Helicopter Flying School (DHFS), an Independent unit at RAF Shawbury, is to provide basic single-engine helicopter training for the 3 Services. The DHFS also provides advanced twin-engine helicopter training for RAF aircrew and other special courses for the 3 Services and overseas countries.

The concept of a DHFS evolved from the 1994 Defence Costs Study, which led to the selection of a single site for basic helicopter training using contractor-owned aircraft and a proportion of civilian instructors.

The tri-Service school, which is commanded on a rotational basis by a group captain equivalent, is tasked to train over 400 students a year, including navigators, crewmen and postgraduate students. The DHFS was formed on 1 April 1997 and formally opened by the Vice-Chief of the Defence Staff. The first course commenced helicopter flying training on 16 June that year.

The helicopters, the Eurocopter Squirrel HT 1 and Bell Griffin HT 1, and 40% of the instructors are provided by the Contractor FBS Ltd, a consortium of Flight Refuelling Aviation, Bristow Helicopters Ltd and SERCo Defence. Aircraft maintenance and day-to-day support is sub-contracted to FB Heliservices Ltd. All DHFS military and civilian instructors are trained by the Central Flying School (Helicopter) Squadron, as referred to later in the brochure. Two Squirrel cockpit procedure trainers and one Griffin procedural trainer together with a high-specification Griffin flight simulator are also utilized during training.

Flying School

Training Pattern

Prior to commencing flying, students attend 3-weeks of ground school studies which include such subjects as Squirrel technical study, helicopter principles of flight, meteorology and navigation. Students are thus prepared for their 36-hour single-engine basic flying course on the Squirrel with the instructors of No 660 Squadron, commanded by an Army major; instructors are drawn from the 3 Services and the Contractor, FBS. The basic syllabus includes techniques such as hovering and circuits, and advanced exercises which include engine-off landings, low flying and limited power.

After completing the basic 9-week course students then move on to the advanced single-engine phase with No 705 Squadron, commanded by a Royal Navy lieutenant commander, once they have attended one week's ground school. The advanced single-engine course develops basic flying skills and introduces students to instrument flying, navigation, confined areas and night flying.

RAF students move on to their multi-engine training after 10 weeks, while Army students complete 9 weeks' training before they leave to start their Operational Training Phase at Middle Wallop. Royal Navy and overseas students, however, continue their training with 705 Sqn to cover formation flying, winch training and mountain flying to complete 45 hours over 12 weeks.

705 Sqn is also responsible for a number of other courses such as aircraft conversion, refresher, navigator and crewman lead-in training, and familiarising Harrier pilots with hovering techniques.

The advanced multi-engine training phase for RAF helicopter aircrew is provided by No Sixty (Reserve) Squadron on the Bell Griffin HT 1. After 2 weeks' ground school students embark on a 33-week course divided into 4 elements: Module 1, type conversion; Module 2, underlung loads, night-vision goggle training, instrument flying and mountain flying; Module 3, search and rescue (carried out on the Search and Rescue Training Unit at RAF Valley); Module 4, a tactical deployment phase.





THE SQUIRREL HT1 is a single-engine light training helicopter operated by DHFS. It is powered by the Arlel 1D1 gas turbine engine which drives a conventional 3-blade main rotor and a twin-blade tall rotor.

The Squirrel is manufactured in France by Eurocopter at Marignane near Marseilles. As a basic trainer it provides an excellent lead-in to helicopter pilots of the 3 Services who must have already completed their elementary fixed wing aircraft training. The Squirrel HT1 is also used on the advanced single-engine phase as students prepare for the complexities of twin-engine helicopter training and operational flying.

DHFS Helicopters

THE GRIFFIN HT1 is the UK military version of the civilian Bell 412 helicopter built by Bell Helicopter/Textron Inc. It is powered by two Pratt & Whitney PTT 3D turboshaft engines rated at 1800 shaft horse power which drive an advanced design 4 bladed main rotor.

The Griffin has replaced the Wessex as the RAF's Multi-Engine Advanced Rotary Wing training helicopter. It is used to train RAF student pilots (on completion of their basic training on the Squirrel HT1), navigators and crewman to operate a multi-engine and multi-crew helicopter. The Griffin is also an excellent training platform for procedural instrument flying and SAR training.





Cruise Speed:	120 kts
Endurance:	3 hrs
Max Ceiling:	10,000ft
Min Crew:	1 (single pilot)
Max Persons on Board:	6
Max Weight for Take Off:	2100 kg



Cruise Speed:	120 kts
Endurance:	2 hrs 45 mins
Max Ceiling:	10,000 ft
Min Crew:	1 (single pilot)
Max Persons on Board:	11
Max Weight for Take Off:	5400 kg



The Central Flying School (Helicopter) Squadron

One former Commandant noted,
"To fly is heavenly;
to hover is divine!"

THE CENTRAL FLYING SCHOOL
(Helicopter) Squadron (CFS(H) Sqn)
is the rotary-wing element of the CFS
(currently located at RAF Cranwell),
which is the longest serving flying school
in the world having formed on 12 May
1912 at Upavon. The first CFS
Commandant was Captain Godfrey Paine
RN, who was informed by the first Lord
of the Admiralty, Winston Churchill, that
if he wished to take up his appointment
he had 2 weeks in which to learn to fly;
thus began the CFS's fixed-wing history.

Rotary-wing aircraft first entered the field of
British military aviation in 1935, when the RAF
bought six C30 Autogiros for the RAF School of
Army Co-operation. In 1944, however, these
were superseded by Sikorsky YR-4 Hoverflies
used at the RAF's training school at Hanworth.

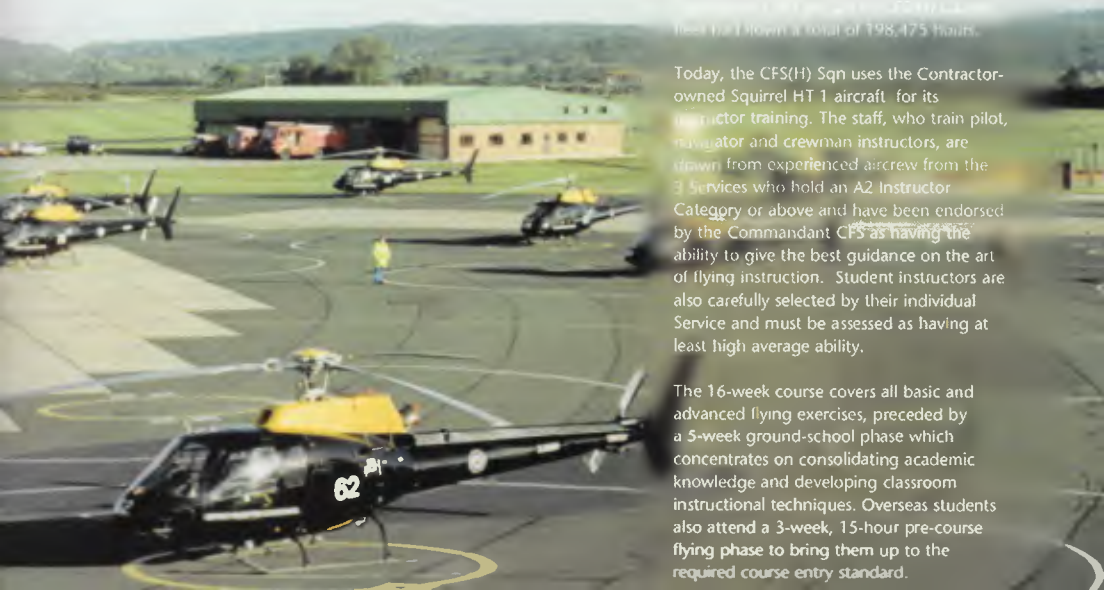
The Malayan emergency in the early 1950s
proved the worth of the helicopter, and thus,
in 1954, the CFS Helicopter Development Unit
(HDU), commanded by Flt Lt John Dowling and
equipped with three Dragonfly helicopters, was
formed at Middle Wallop to evaluate
instructional techniques and procedures.

The HDU spent much of its early days
supporting bids for VIP transport, especially
members of the Royal Family but later,
following a move to South Cerney, it became
engaged in full-time development of a suitable
instructional syllabus, based on proven fixed-
wing methods used on the Piston Provost.
In 1955 helicopter types now included the
Sycamore and Whirlwind, and by 1957 the
CFS(H) Sqn was training not only instructors
but also operational helicopter pilots for the
3 Services, the civilian contract with Westland
for this task having been terminated.

Following the departure in 1957 of the Piston
Provost element of CFS to Little Rissington the
CFS(H) concentrated on training pilots and
instructors and staff officer familiarization
courses.

In 1961 the CFS(H) moved from South Cerney
to Tern Hill and became a wing with two sqns,
one for pilot and QHI training and the other
for standards, equipped with Dragonflies,
Whirlwinds, Sycamores and Skeeters.
By February 1968 the CFS(H) fleet consisted
of 10 Sioux (which had replaced the
increasingly unpopular Sycamore) and
16 Whirlwinds; by 1973 the Sioux had been
phased out to leave the Whirlwind Mk 10
as the sole training type.





the Sikorski UH-60M of the UH-60M family, formed the 30th of its main body, and the last of the UH-60M family helicopter design, which will be used in the future. The UH-60M is a 40-tonne helicopter, the most powerful in the world. It has a maximum speed of 240 knots (444 km/h) and a maximum altitude of 14,000 feet (4,267 m). The UH-60M has a total of 198,475 hours.

Today, the CFS(H) Sqn uses the Contractor-owned Squirrel HT 1 aircraft for its instructor training. The staff, who train pilot, navigator and crewman instructors, are drawn from experienced aircrew from the 3 Services who hold an A2 Instructor Category or above and have been endorsed by the Commandant CFS as having the ability to give the best guidance on the art of flying instruction. Student instructors are also carefully selected by their individual Service and must be assessed as having at least high average ability.

The 16-week course covers all basic and advanced flying exercises, preceded by a 5-week ground-school phase which concentrates on consolidating academic knowledge and developing classroom instructional techniques. Overseas students also attend a 3-week, 15-hour pre-course flying phase to bring them up to the required course entry standard.



THE EARLY YEARS

Although rudimentary flying control at aerodromes was being conducted well before 1938 it was in that year, following a suggestion by the AOCinC Bomber Command, that the first Area Controllers were trained at HQ Bomber Command.

ATC training has taken place at RAF Shawbury since 1950, when the Central Navigation School was joined by the School of Air Traffic Control from RAF Watchfield to form the Central Navigation and Control School (CN&CS). No 173 Air Traffic Controller Course was the first to run at Shawbury together with No 1 Joint ATC Course which both commenced in March 1950.

In 1953, the Ground Controlled Approach School moved from Wyton to Shawbury and the number of courses rose to 10 in May 1954 with a total student population of 154. In the same year the Vampire Flight was formed for high-level practice controlled descents through cloud (QGH) and high-speed ground-controlled approach (GCA) practice. Flying of various aircraft types, including Vampires, Provost T1s and Jet Provosts, continued at Shawbury in support of ATC training until 1989.

A significant expansion occurred in 1958 when the ACR7C radar arrived and, to relieve the increasing pressure of ATC courses using radar aids, the old wartime airfields at Sleaf and High Ercall were taken over and used as satellites. In addition, the main runway had been extended, the runway and airfield lighting upgraded and a new ATC tower built on the west side of the airfield.

In 1963 the Navigation Wing of the School moved to RAF Manby and the ATC element was renamed the Central Air Traffic Control School (CATCS). The Area Radar Training Squadron arrived from Sopley in September 1972, thus finally concentrating all elements of military ATC training at Shawbury.

SYNTHETIC TRAINING

Until 1961, all ATC training was conducted using live aircraft; however, later that year the first simulator, known as the Crabs trainer (used to work out bearing directions) arrived, followed by a second later in 1962. In early 1963, the first computer - driven simulator arrived, which provided 2 Corsor search radar displays and a direction-finding display (CADF); precision approaches were carried out on the search radar short-range display. Throughout the 1970s and 80s the upgrading and increasing establishment of simulators continued as ATC courses developed and new technology was able to provide better synthetic training. This culminated in the arrival of the state-of-the-art visual simulator in 1992.

Central AIR TR



ATC TRAINING TODAY

CATCS is tasked to instruct over 550 students per annum, including post graduates. In addition to state-of-the-art ground school facilities, a variety of simulators are used in student training, up to fourteen often being in use at any one time.

CATCS
Headquarters

Basic Training
Squadron

Advanced
Training
Squadron

Flight
Operations
Training School

Computer
Systems
Squadron

Flight Training
Squadron

BASIC TRAINING SQUADRON (BTS)

BTS is responsible for the initial training of all RAF and RN Controllers and selected foreign and Commonwealth students. Controllers are trained on the Joint Air Traffic Control Course, which covers all aspects of Terminal Control. Throughout the course students are given Ground School instruction, practice procedures on the Basic Radar Skills Trainer, and practical instruction in simulators. BTS is also responsible for all the training of Flight Operations Assistants, RAF and RN personnel, carried out at the Trade Training Flight.

ADVANCED TRAINING SQUADRON (ATS)

ATS runs post-graduate courses for personnel taking up specific controlling or administrative duties. The Air Traffic Controller Instructor's Course prepares instructors for duties at CATCS, whilst the Area Radar Training Course prepares RAF and RN controllers for duties at the London and Scottish Air Traffic Control Centres, and at other area radar units. ATS also prepares controllers for training duties on units, and runs refresher courses for personnel returning to controller duties following employment elsewhere.

AFFIC CONTROL School



FLIGHT OPERATIONS TRAINING SCHOOL (FOTS)

Formed in 1997, the Flight Operations Training School trains personnel for the flight operations specialisation. FOTS runs courses for both ab-initio officers and abbreviated course for officers transferring from other branches.

CATCS strives to meet the challenges facing it by adopting a flexible approach to its work. The School is always looking for ways to improve its performance in order to provide its customers with the required number of students who have the ability to become operational in the shortest possible timescale.

CATCS can also cater for the requirements of civilian and/or foreign organizations, and UK civilian and foreign military and civilian students often attend courses

COMPUTER SYSTEMS SQUADRON (CSS)

All CATCS squadrons are assisted by Computer Systems Squadron, which provides IT support and helps develop and maintain the computerized training systems, simulators and networks.



Engineering **SUPPORT**

The presence of civilian engineering personnel at RAF Shawbury is not a new phenomenon, as the majority of the No 27 Maintenance Unit workforce, which arrived in 1938, was civilian. The civilian presence on the base was then enhanced in 1961 with the arrival of Marshall of Cambridge (Outstations) Ltd, which won the contract to service and fly the Varsity, Piston Provost and Vampire aircraft, to man engineering-related sections and to service and maintain the air traffic control simulators

In 1979 Marshalls won the contract to run the Bulldog and Chipmunk second-line servicing for the majority of the university air squadrons and air experience flights, until 1990. Also, in 1986, Marshalls took over from the RAF the responsibility for helicopter maintenance, fixed-wing aircraft storage, supply and a range of supporting functions.



FRA SERCo Arrives

The engineering and supply support contract renewal in 1991 saw a new contractor on the scene, FRA SERCo – a consortium of Flight Refuelling Aviation Ltd and SERCo Defence, which continued to provide vital support for the station's training and storage tasks until 1999, when the running of the multi-activity contract was taken on by FR Aviation Services Ltd, then FB Heliservices Ltd in 2001.



RT & Aircraft Storage

The DHFS Contract

In October 1996 the existing contract was replaced with another contract with FBS Ltd, a company formed between Flight Refuelling Aviation, Bristow Helicopters Ltd and SERCo. This 15-year contract not only covered the engineering and supply aspects already in place, but also included the provision of the 35 Squirrel and Griffin helicopters for the Defence Helicopter Flying School at Shawbury. In practice, FBS sub-contracts the support of the DHFS and RAF Shawbury to FB Heliservices Ltd, thus maintaining the partnership between the company and RAF Shawbury forged over the previous 5 years. Also included in the contract is the provision of 40% of the helicopter instructors, Operations Support staff and Flight Systems Operators in the Central Air Traffic Control School.



Aircraft Storage

A number of front-line and training aircraft, not required for day-to-day use, are held in reserve at RAF Shawbury. These spares are stored in four specially de-humidified hangars at varying states of readiness and can be brought back into active service as required by the RAF's overall airframe management policy which aims to equalize fatigue life across the fleet. Aircraft brought in for storage, either by road or air, are inspected and prepared in the Aircraft Maintenance and Storage Unit's preparation hangar, according to the depth of storage required; whilst the aircraft are in storage the FB Heliservices Ltd maintenance engineers perform routine checks including periodic engine running. Before aircraft are brought back into use they are given a thorough servicing and, unless being transported to their destination by road, are air-tested before departure from RAF Shawbury to their operating unit. Some aircraft and helicopter types no longer required for Service use are also stored at Shawbury pending their disposal.





A major consequence of the formation of the Army Air Corps in 1957 was the loss of its helicopters, which were retained by the RAF, and the re-titling of the unit as No 6 Independent Flight, equipped - from 1958 onwards - with 3 Auster Mk 6 and 3 Mk 9s.

Re-designated No 6 Liaison/Depot Flight in 1959, the unit gradually assumed a trials role while maintaining its VIP liaison role. By 1961 it possessed 3 Beavers, 2 Alouettes and 2 Auster Mk9s.

No 6 FLIGHT ARMY AIR

Equipped with Austers, No 1906 Air Observation Post Flight was formed in December 1946 from A & C Flights of No 654 Squadron based in Ronchi, Italy, but was disbanded in June 1947.

The Flight was reformed in May 1950 as 1906 (Helicopter) Flight and was attached to No 657 Squadron for administrative reasons and based at Middle Wallop. It was designated the War Office VIP Flight and was equipped initially (until November 1950) with two Hoverfly R6s and four Sycamores (Until late 1957). It also operated two Hillers during the grounding of the Sycamores in early 1954 and took part in trialling the Skeeter in 1956.

During this time the Flight and its aircraft were officially RAF although all the pilots and groundcrew - excluding engineers - came from the Army. The Flight flew many illustrious passengers including Field Marshals Alexander, Slim and Harding as well as many prominent politicians of the day Army. The Flight flew many illustrious passengers including Field Marshals Alexander, Slim and Harding as well as many prominent politicians of the day.

1966 saw the loss of both fixed-wing aircraft types, together with the trials role, and a move of the unit to Netheravon. The Flight was re-cast, yet again, in April 1978 as part of No 658 Squadron when the squadron reformed, but finally lost its separate identity in 1984 when No 658 Squadron moved on to the standard AAC establishment.

On 1 June 1993 the Flight was reformed as 6 Flight Army Air Corps (Volunteers), based at RAF Shawbury, and equipped with four Gazelle AH 1 helicopters. Its role is to provide communications, transport and exercise support for both Regular and Territorial Army units in Land Command. The Flight's Commanding Officer and Artificer are both Regular Army; the remainder of the unit's 20 staff comprise two non-regular permanent staff and Territorial Army aircrew.



R CORPS (VOLUNTEERS)

